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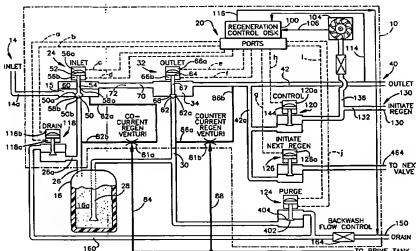
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(54) Title: CONTROL VALVE ASSEMBLY



(57) Abstract: A control valve assembly (10) controls the flow of water to and from a treatment tank (16) and the regeneration of the treatment material therein. A housing of the valve assembly includes connections for a tank inlet and tank outlet, An inlet chambers (60), outlet chamber (34), a pressure-operated inlet valve (24) and an outlet valve (32). A pair of venturi chambers (81a, 81b) are configured to provide co-current and counter-current regeneration. A regeneration control subsystem includes a turbine (104) and a nozzle impinging thereon to produce rotation. An external port (130) receives fluid to provide a driving for the turbine in order to initiate regeneration. A bypass chamber (60) communicates with the inlet chamber (15). The inlet valve (24) has dual seating surfaces for controlling the communication between the inlet chamber, transfer chamber (70) and tank inlet (26).

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